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EMBOLISM OF ILIAC ARTERY.

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Read before the Yonkers Med. Association Sept. 18th 1874

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AND EMBOLISM OF THE LEFT ILIAC ARTERY.

Presented by
G. B. Balch.

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RUPTURE OF AN ATHEROMATOUS AORTA, AND EMBOLISM OF THE LEFT ILIAC ARTERY.

The following history seems to present points worthy of record and remark:

J. C. B., a manufacturer, fifty-one years of age, five feet six inches in height, weighing one hundred and eighty pounds, in every way well developed, of regular and temperate life, came under my notice on the 17th of August, 1874.

His family were not aware that he had consulted a physician for eighteen years before that date, except on one occasion, when he was told that he was suffering from nervous prostration, advised to leave off smoking, obeyed and got better, finally quite well. He had taken two life-insurance policies in the last two years, after examination. His wife had sometimes noticed a rapid action of his heart, but when she mentioned it he replied that he was not conscious of it.

He was habitually quiet in all his movements, but no one knew that active exertion incommoded him in any way. On the 15th of August he went down to Long Branch for recreation. After retiring for the night, he reports that he had a "nervous chill, followed by some fever," but it passed away, and did not much impress his own mind. The following evening he returned to New York. At breakfast on the morning of the 17th, his health and spirits excited the notice of friends, and he replied that he never felt better in his life. At or about 12 M. on that day, while standing and writing at his desk, he felt a sudden sharp pain in his "chest." From the fact that at the time he thought of it as perhaps "wind," I infer that the pain was felt about the epigastrium.

Directly it "passed downward to the kidneys," he felt a faintness, weakness, and oppression for breath, but shortly he was able, with the assistance of two men, to walk across the street, and up two flights of stairs to a bedroom. About fifteen minutes later I found him slightly livid in color, bathed in cool perspiration, complaining of great difficulty in breathing, pulse weak, about 150 per minute, a condition like collapse. He said that, directly after the pain attacked him, he felt a numbness and loss of power in the left leg. The respiratory sounds were hurried but normal, both sounds of the heart audible, no murmur or thrill. The percussion note was clear all over the thorax, front and rear; air traversed all portions of the lungs.

There was total loss of impulse in the left femoral artery, as high as the ring. A feeble, doubtful pulse in the posterior tibial. Treatment appropriate to collapse was directed, and, the gravity of the case being apparent, Dr. A. B. Mott was called in consultation, and continued in attendance as consulting-physician until death occurred. By degrees the symptoms of collapse passed off, but the dyspnœa and interruption of circulation in the limb continuing, it was enveloped in blankets and heat applied.

At 9 P. M. the pulse was 150; respirations 50–60; dyspnœa continuing; limb warm. At 9 P. M. the next morning the pulse was 130, of fair volume; both limbs of the same temperature, but the left pulseless and a little livid. The dyspnœa was not relieved or materially increased. The chest was generally and abnormally resonant under percussion, and the respiration "rude" throughout. Heart-sounds muffled. The patient had passed a night in tolerable comfort, sleeping at short intervals. The evening record was essentially the same.

The following morning (third day) Dr. J. R. Leaming was added to the consultation. A very careful examination of the chest showed the same conditions above recorded, except that there was a crackling sound across the lower portion of the chest posteriorly, on both sides. No doubt was felt that all portions of the lung were pervious to air, but it was believed that the abnormal resonance was due to an interruption to the entrance of blood. No abnormal thrill or impulse could be heard. The left lower extremity was warm and free from

pain, but heavy and pulseless. Cutaneous sensibility diminished, but not abolished.

The following morning (fourth day) the dyspnœa was apparently increasing, the moist *râles* continuing, but air still passing all through the lungs. The general condition of the patient was not materially changed; action of the bowels and kidneys maintained by drinking Congress-water. Dyspnœa palliated by inhalation of oxygen. Food was taken with relish, and in sufficient quantities.

The following morning (fifth day) the left chest was found dull on percussion throughout, except at the upper and lateral portion. Marked flatness from the apex of the heart upward to the middle third of the clavicle, and across to the right of the sternum. Egophony distinct as high as the middle of the scapula. Dyspnœa persistent and increasing. Complained of some pain about the heart, and shrank from percussion.

9 P. M.—Condition about the same. Objected to further examination of the chest; limb warm and natural in appearance. Had more power in it. Thought he felt better, and talked with his family of a hope of recovery. After sitting awhile in his chair, he returned to his bed, a little before 11 P. M.; was shortly observed to straighten himself backward and become incapable of articulation. Death occurred at 11½ P. M.

Autopsy, Sixteen Hours after, the body having been on ice.—Present, Drs. Mott, Austin Flint, Sr., Guleke, Rogers, Wagner, and Pooley. The sternum was removed with difficulty, on account of ossification of the cartilages. Beneath it, from the level of the heart to the root of the neck, lay a long compressed mass, inclosed in the anterior mediastinum, all the areolæ of which were distended with firm coagula of blood. The right pleura contained a little serum, the left was three-fourths filled with serum and soft coagula; of the latter a mass equal in size to the healthy adult liver was lifted out, and about a quart of serum. Since this serum was clear, free from fibrinous flakes, and the serous membrane was everywhere smooth and shining, there was no evidence of inflammatory effusion or exosmose. That which we saw, therefore, was the separation of the liquor sanguinis from the crassamentum, as appeared by the relative quantities of each.

The pericardium was smooth, transparent, entire, and col-

lapsed. The lungs were free from traces of old or recent disease, pale, crepitant everywhere except about the entrance of the vessels, particularly on the left side, where there was a considerable area solidified by the infiltration of blood. Prolonged effort was made to find the point where the blood escaped into the pleura, the viscera being *in situ*, but the search was not successful. Therefore, the trachea and vessels were cut at the root of the neck, the organs lifted, and the aorta cut in its descending portion.

The pericardium was now opened, and showed a heart of normal size. The ventricles, opened longitudinally, were found to have firm walls of clear red color; the cavities were empty, and the internal surfaces everywhere free from signs of disease or degeneration, except that the corpora Arantii of the aortic valves were gritty and enlarged. About an inch without the valves, in the aorta, there were three patches of atheroma, about three lines in diameter, arranged in line parallel to the course of the vessel. They were in a softened and excavated condition. The ulceration extended through the intima and nearly through the muscular coat, but there had been no separation of one coat from another. No sinus or sacculated portion was found upon any portion of the thoracic or abdominal aorta, nor was the point where the blood escaped into the mediastinum found; that portion of the aorta which was removed with the heart, extending an inch or more beyond the left subclavian, was opened and carefully examined, but showed nothing more than an occasional patch of atheroma. Time was not allowed us to dissect up the remainder of the aorta, but we saw no apparent dilatation or rupture anywhere in its course. The common iliac of the left side was plugged, just below the bifurcation of the aorta, by a gritty fragment of the vessel. At the point where this was arrested, the calibre of the iliac was narrowed by a calcareous patch, which extended nearly around the artery. Between the plug and the femoral ring, the vessel was filled with a soft coagulum like currant-jelly. Wherever examined, the muscular coat of the artery could be easily split, and the adventitia very easily detached from it. I could not say whether the muscular coat would more readily divide into laminæ, or separate as a whole from the adventitia. A little care would secure either result, and

this condition was observed both in the arch of the aorta and throughout the iliac.

It is much to be regretted that we were unable to prolong the examination so as to find the sinus by which blood entered the mediastinum. It probably lurked somewhere on the posterior wall of the vessel below the arch and above the bronchial arteries, perhaps coinciding with the point whence the aortic fragment was detached to constitute the embolus. The infiltration of the lungs about the root was in the areolar tissue, not in the air-cells. There was never, in the progress of the case, any cough or bloody sputa.

In the review of this interesting case we are at liberty to make the following conjectures: The chill which was felt on the night of August 15th may have marked the penetration of blood between the coats of the aorta at the site of some atheromatous patch. But the obstruction was not such as to occasion any continuous disturbance of comfort. On the morning of the 17th, at the moment when the patient felt a sudden pain in the epigastrium, sweeping downward to the kidneys, quickly followed by arrest of circulation in the left leg, and increasing dyspnœa, the lifted portion of the aortic wall was detached and carried downward into the iliac, and there stopped at a point made narrow by calcareous infiltration. About the same time the external coat ruptured into the mediastinum. A considerable volume of blood escaped, producing the symptom of temporary collapse. Perhaps it traveled along the sheath of the bronchial arteries into the pulmonary parenchyma, or it somewhat compressed the pulmonary artery, in some way shutting off the supply of blood to the lung, producing dyspnœa. It will be remembered that, until the last day, the chest was found to be abnormally resonant, and that at the autopsy there was no clot in the right heart, and the lungs were pale. This could hardly have been the case if the pulmonary veins, pulmonary artery, or the thin walls of the left auricle, had been subjected to forcible compression. Moreover, after the first collapse passed off, the circulation was good and even strong. It is probable, therefore, that effusion into the mediastinum was first limited to the posterior portion, and that coagulation took place, temporarily arresting further escape. The thoroughly consolidated character of the clot in

the mediastinum indicated that it was not formed at a late period in the case. Probably it continued to dilate slowly all the mediastinal spaces, and, since we found fluid in the chest twelve hours before death, it had even then begun to flow into the pleura. At length, after a change of position, a wider rent was made, a fuller current flowed in, and fatal syncope occurred.

The observation that the artery admitted of ready separation of laminæ in the middle coat, corresponds with Dr. Peacock's observations on that point.

A case, which constitutes in its rational signs a close parallel to the above, is cited in "Holmes's Surgery," from the "Transactions of the British Pathological Society," as follows:

"A man, aged fifty-one years, who had suffered for some time under symptoms referred to a diseased heart, with aortic regurgitation (to which one of his medical attendants, Dr. Latham, had added disease of the aorta), was seized suddenly one evening, as he was returning from a day of some exertion and excitement, with a very severe, tearing pain in the chest, instantly followed by a second agonizing pain, which seemed to dart from mid-sternum down the left of the spinal column, and only to be arrested a few fingers'-breadth below and to the left of the umbilicus, at which point of arrest the patient thought he heard a distinct crack. He lost power in both lower extremities at once. A bellows murmur was heard below and to the left of the umbilicus. The tearing pain recurred, and he then passed into a state of syncope, followed by great exhaustion and distress. Reaction set in next day with much congestion, greatly relieved by bleeding. He survived about three months, dying of dropsy and hydrothorax. The pulse had recurred feebly in the right femoral artery before death. The diagnosis of dissecting aneurism originating near the root of the aorta, and passing downward, so as to compress the channel of the vessel near its bifurcation, was made at the time of the seizure, and confirmed by dissection. A transverse rent was found in the arch of the aorta just below its three large branches, a clot of blood was impacted near the bifurcation of the artery, obstructing the left common iliac completely and the right partially."